User's Guide: CADA-U32A Series RAID Enclosure

This guide contains instructions for changing the RAID settings on your CADA-U32A Series Personal Disk Array. If you need assistance, please contact customer service at customersupport@cavalrystorage.com. The guide is structured as follows:

Diagrams

Front View:

1. Power indicator
2. Rebuild indicator
3. HDD1 Access Indicator
4. HDD2 Access Indicator
5. HDD1 Error Indicator*
6. HDD2 Error Indicator*
7. Ventilation

*The error LEDs light up when the corresponding hard drive fails, when there are rebuilding errors and when the corresponding hard drive is not present.

Rear View:

1. Power switch
2. Power port
3. USB 2.0 port
4. Fan for ventilation

RAID Settings Descriptions

SINGLE MODE   Array will show up as two independent drives. This function can be used if only if two different brands and/or capacities of HDDs (Hard Disk Drives) are installed.

SPANNING MODE   Two HDDs will show up as a single drive with the combined capacity of both drives. Spanning writes data sequentially across two drives.

RAID 0 (Striping)   Two HDDs will show up as a single drive with the combined capacity of both drives. Speed and performance increase. The two HDDs "stripe" data across the two drives. This splits each piece of Data across both HDDs in segments in a way that speeds up reading and writing times. However, RAID 0 does not offer any data protection: if one drive fails or is damaged, all data can be lost.

RAID 1 (Mirroring)   The RAID controller creates an extra copy (or mirror) of data on the two drives. Only a single drive will show up on your computer, and it will have the capacity of a single drive.

Data is protected from the failure of one drive. If one drive fails, replace it with an identical drive and the data rebuilds automatically.

Using this mode requires 2 identical HDDs; the two drives must be the same capacity, brand and model number.

Changing RAID Settings

1. Start your computer and wait for your operating system to load completely.

2. Connect the square end of the USB 2.0 cable to your CADA-U32 disk array. Connect the flat end of the USB 2.0 cable to your computer.

3. Connect the power cable to your CADA-U32 disk array. Connect the other end of the power cable to an electrical outlet.

4. Turn on the drive.

5. You will need to uninitialize the drive before changing RAID settings. To do this, follow the instructions for your Operating System. (Windows users, see below; Mac OS X users, see page 7) If your operating system is not listed, contact customer service for assistance.
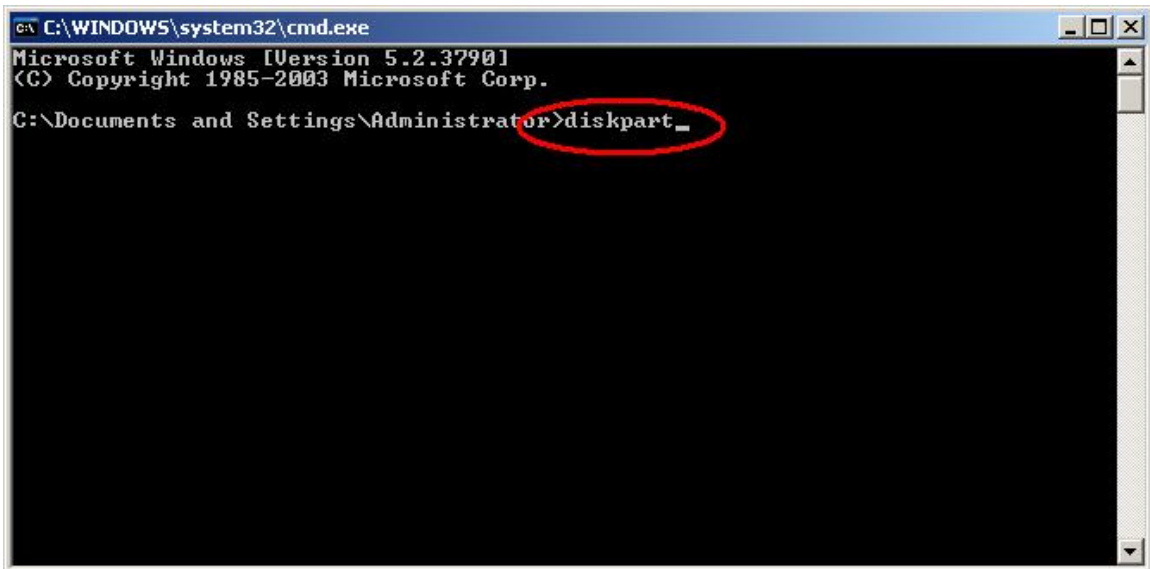
Windows 2000/XP/NT/Vista

a. Go to the Start Menu and click on "Run".
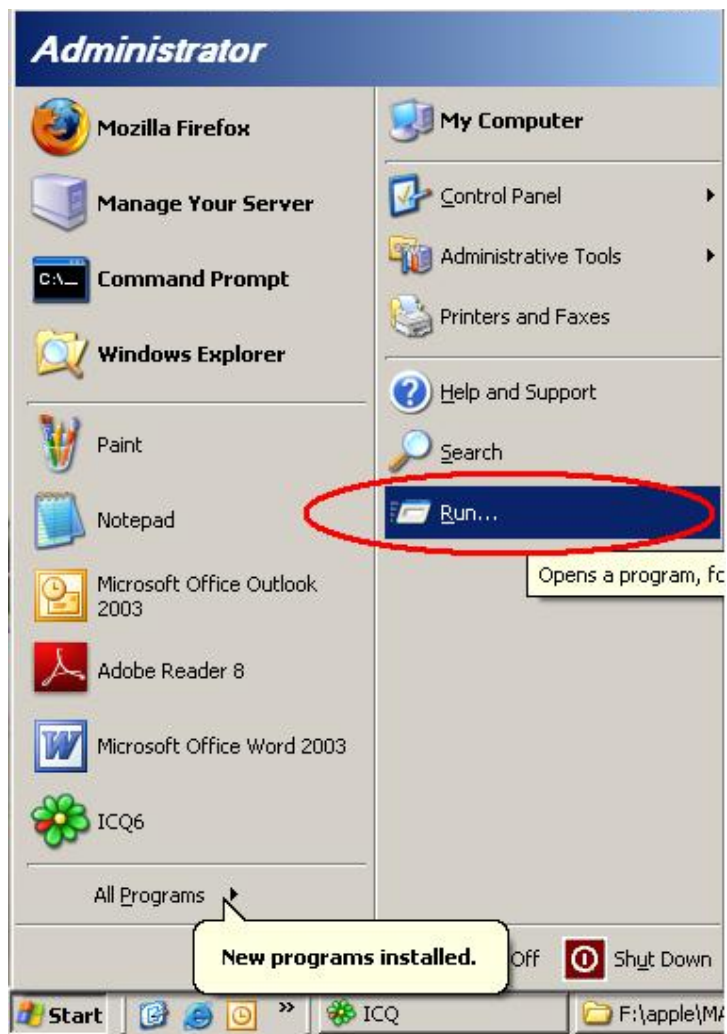
b. The Run dialog box will show up. Enter "cmd" in the text box then press the <ENTER> key.
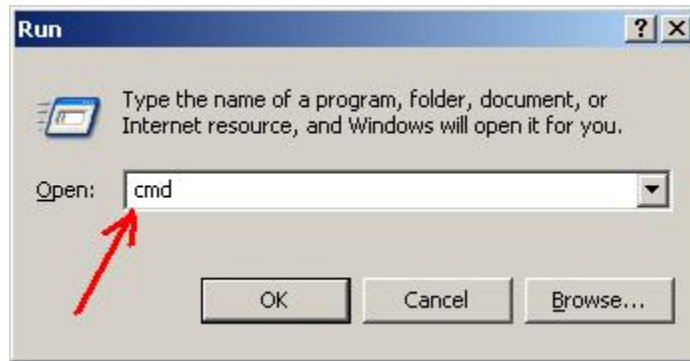
c. Virtual DOS command console window will start. You will see the blinking cursor where you can type commands. Now type "diskpart" as shown then press the <ENTER> key.

d. Now to use DISKPART. Warning: Be careful not to select your system drive as you could erase it and your current Windows system!

    i. Type "list disk" to show all of your physical drives. Identify which is the external drive. Make sure you know which before continuing.

    ii. Now select it by typing "select disk #", where # is the number of the drive listed in the disk list.

    iii. You can check that you selected the drive properly by typing "list disk" again. The table will appear again with an asterisk (*) next to the selected disk.

    iv. Now type "clean" to completely un-allocate and un-initialize your disk. Make sure you've selected the correct disk before typing "clean".

    v. The drive is cleaned now. You can type "exit" to exit DISKPART and type "exit" again to exit the virtual DOS window, or just close the window to get back to your Windows desktop. Continue to **Step 6** (p.12).

```
C:\>diskpart

Microsoft DiskPart version 5.2.3790.1830
Copyright (C) 1999-2001 Microsoft Corporation.
On computer: TECH3842

DISKPART> list disk

  Disk ###  Status      Size      Free     Dyn  Gpt
  --------  ----------  --------  --------  ---  ---
  Disk 0    Online      190 GB    8033 KB
  Disk 1    Online      233 GB     233 GB

DISKPART> select disk 1

Disk 1 is now the selected disk.

DISKPART> clean

DiskPart succeeded in cleaning the disk.

DISKPART> exit

Leaving DiskPart...

C:\>
```

i. →
ii. →
iv. →
v. →

Mac OS X

   a. Go to top menu "Go" and select "Utilities". The Utilities window opens. Select "Disk Utility" to start the disk utility program.

b. Click the header on the left which starts with the drive size in gigabytes (1). Now click on the "partition" tab on top (2). Disk Utility will switch to it's partitioning function pane. Now click on the dual arrow button under "Volume Scheme" (3). Choose "1 partition" (4).
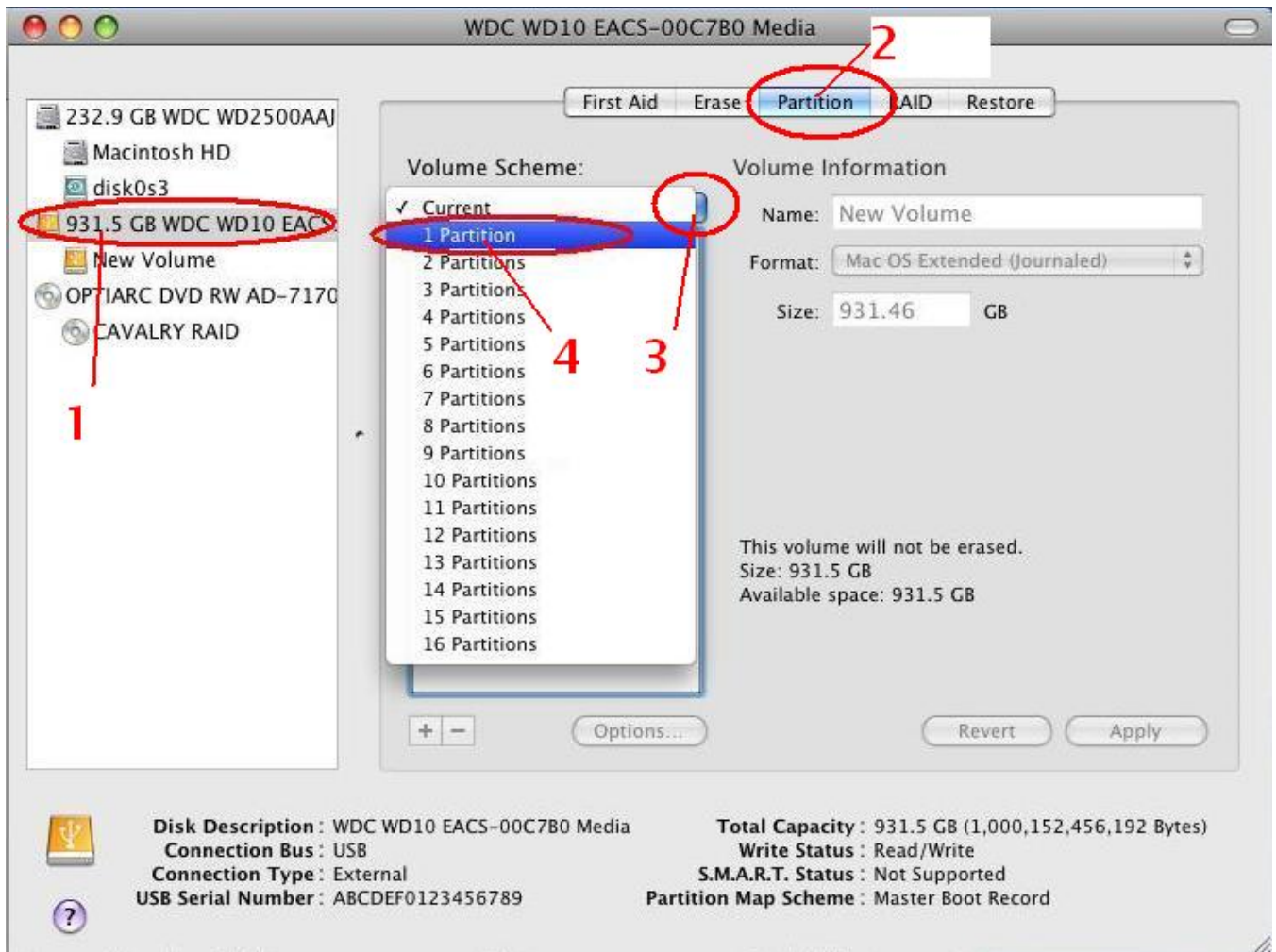
c. Now click on "Options" under the partition graph (1). The partition scheme type selection window will pop up. Make sure the selection is "Apple Partition Map" (2). Then click "OK" (3). You can leave the format type on the right to "MAC OS extended (journaled)" (4). Then click "Apply" to start partitioning (5).
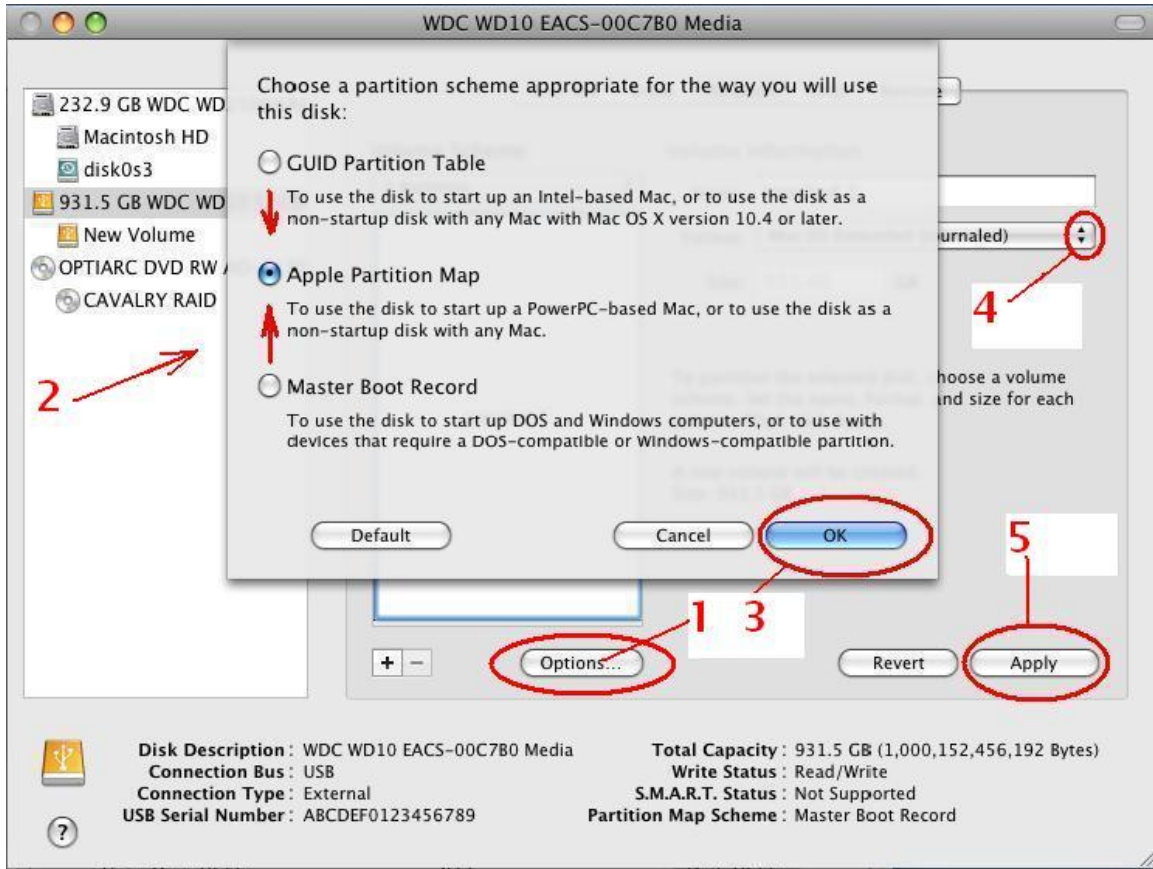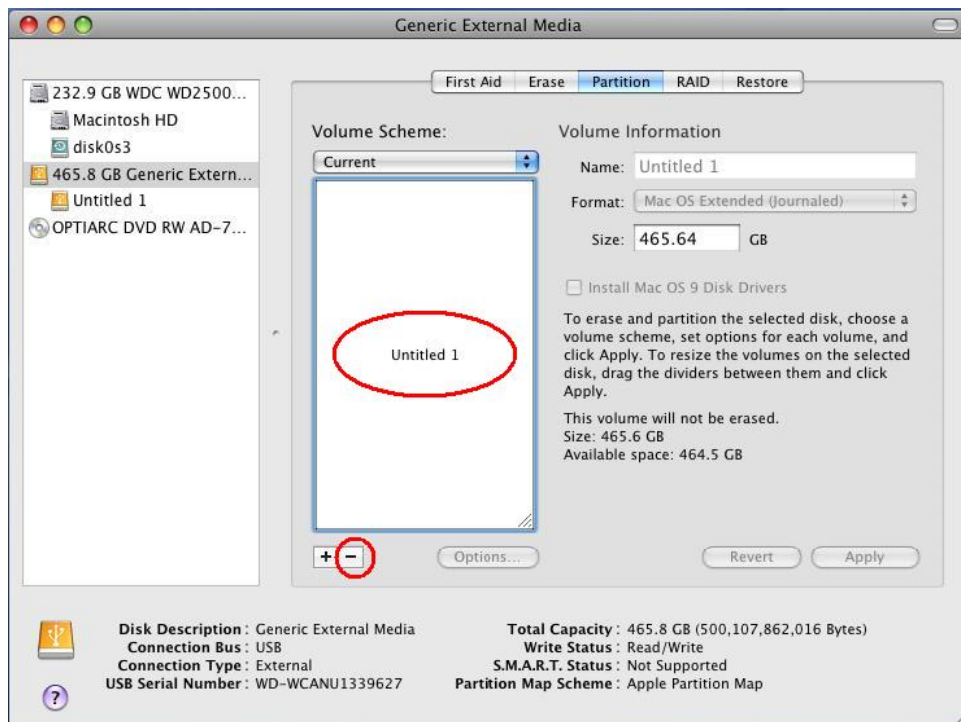

d. The warning dialog for partitioning will pop up. Go ahead click "partition".

e. The drive will start partitioning as shown. It should take a minimum of 2 minutes to finish.
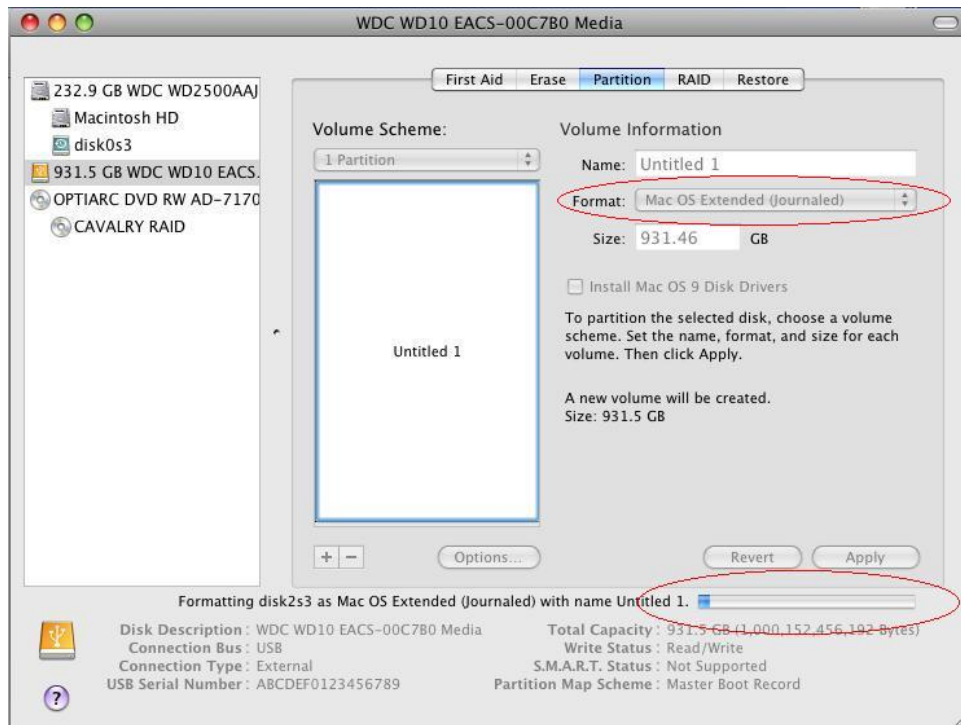
f. You now have a MAC OS extended partition. We can now delete the volume and clear the drive. Click anywhere on the partition graph representing the partition. Notice the [+ / -] under the graph on the lower left. Click the [-] button to delete the partition.

g. The warning dialog for erasing the partition will pop up. Go ahead click "Remove".
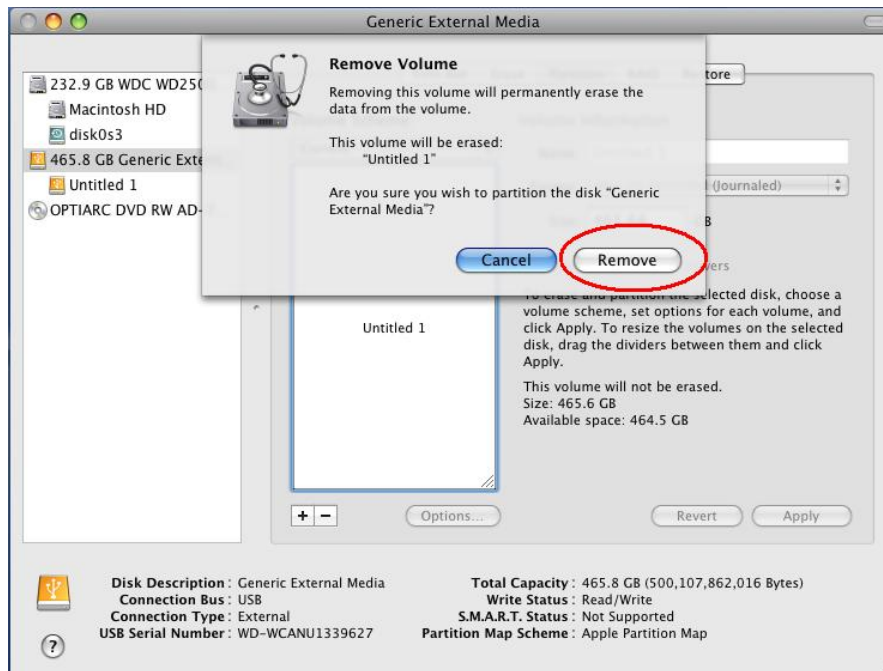
h. Your drive is now clean of all partitions. Continue to **Step 6** on the next page.
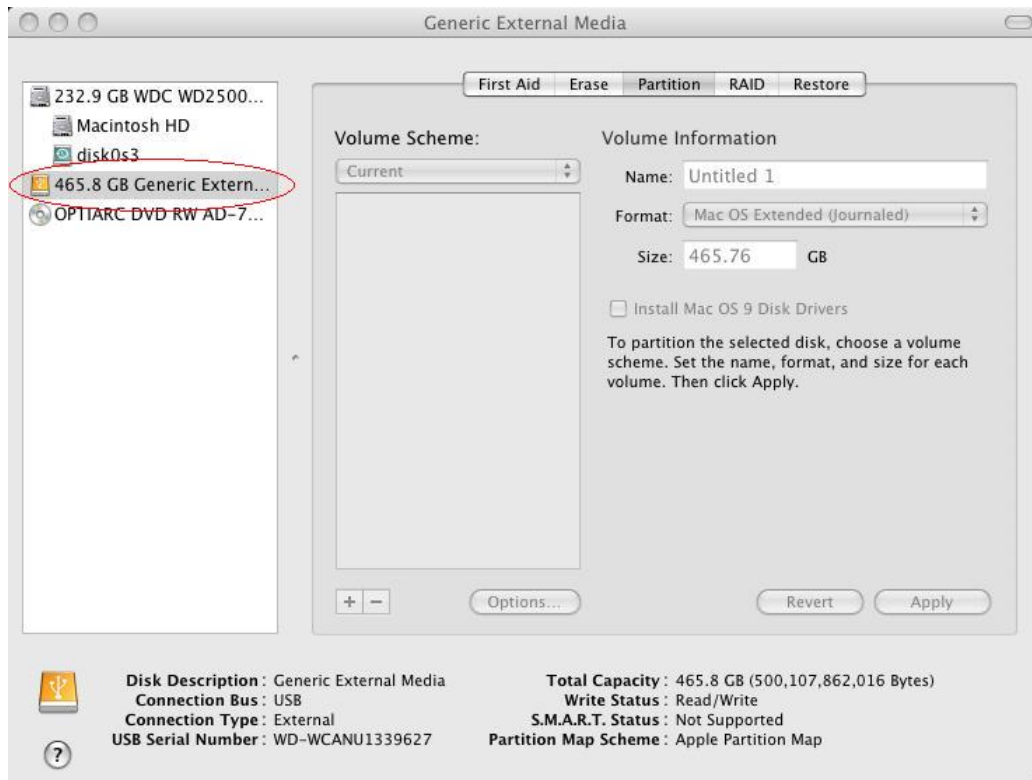
6. After the drive is completely uninitialized, turn off your drive. Set the CADA-U32 on its side. Remove the cover by removing the screws on the bottom of unit. The screws only need to be removed on the "top" side. The "top" side is the side to which the power switch (on the back of the unit) is closest. Once the screws are removed, insert the screw-driver into the holes left by the screws and push upward to release the top cover.
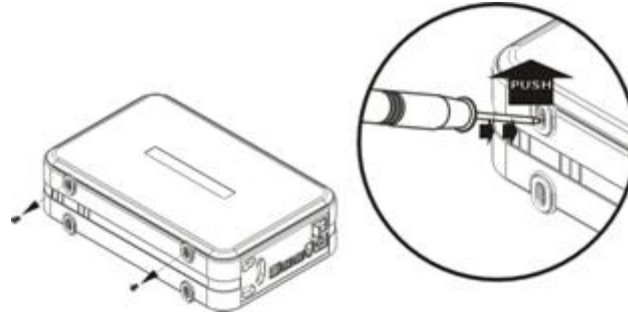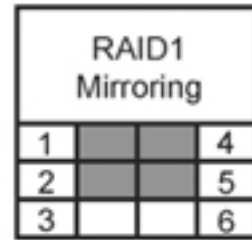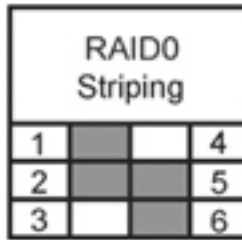
7.   Locate the "Jumper Block". The Jumper Block consists of 6 Jumper Pins, with 4 pins being covered by two black "Jumper Shunts" at any given time.

Back of drive

The Jumper Block

The Jumper Shunts on a standard business card for scale.
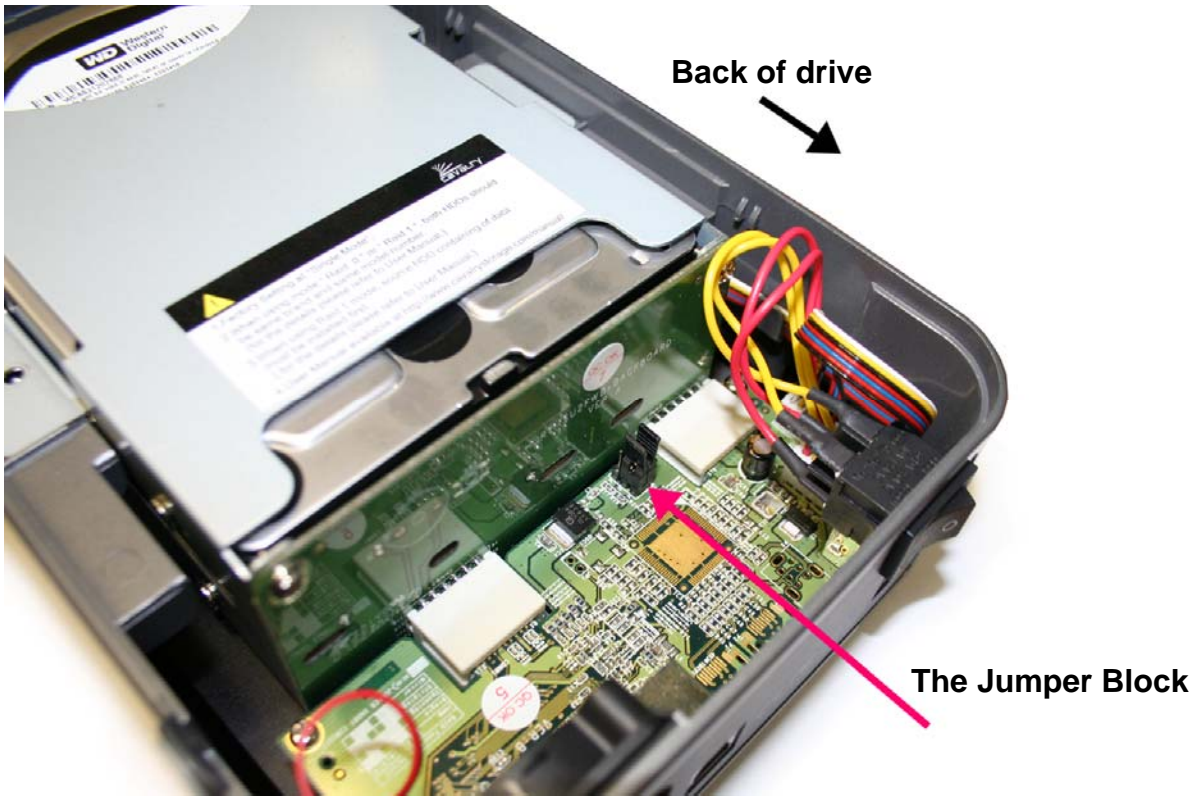
8. Decide which RAID setting you want, and, following the diagram to the right, move the jumper shunts to cover the appropriate pins. (On the diagram to the right, grey indicates that a pin is covered; white indicates an uncovered pin.)
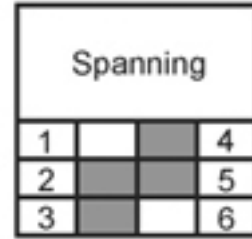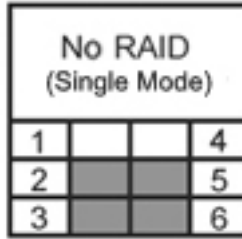
The jumper shunts may be moved by gently pulling them upwards (vertically) until they are free, then pushing them downwards onto the appropriate two pins.

No RAID (Single Mode)

1			4
2	▓	▓	5
3	▓	▓	6

Spanning

1		▓	4
2	▓	▓	5
3	▓		6

RAID0 Striping

1	▓		4
2	▓	▓	5
3		▓	6

RAID1 Mirroring

| 1	▓	▓	4
2	▓	▓	5
3			6

NOTE: If switching from any mode **to RAID 1 mode**, you must first configure the jumper block to "Single" mode. Then connect your drive to your computer, turn on your drive, and repeat step 5 (un-initialization) on BOTH drives (in single mode, the array will show up as two drives). Then you may continue again from Step 6 and configure the jumper block to RAID 1.

NOTE: When placing the jumper shunts, **make sure they are oriented along the longest axis of the drive.** For example, if you want RAID 1 mode, one jumper shunt would cover pins 1 and 2, and another jumper shunt would cover pins 4 and 5, as opposed to one jumper shunt covering pins 1 and 4, and another jumper shunt covering pins 2 and 5.

Fig. A (below) shows how the [uncovered] jumper pins are numbered. The black arrow points to the back of the drive.

Fig. A
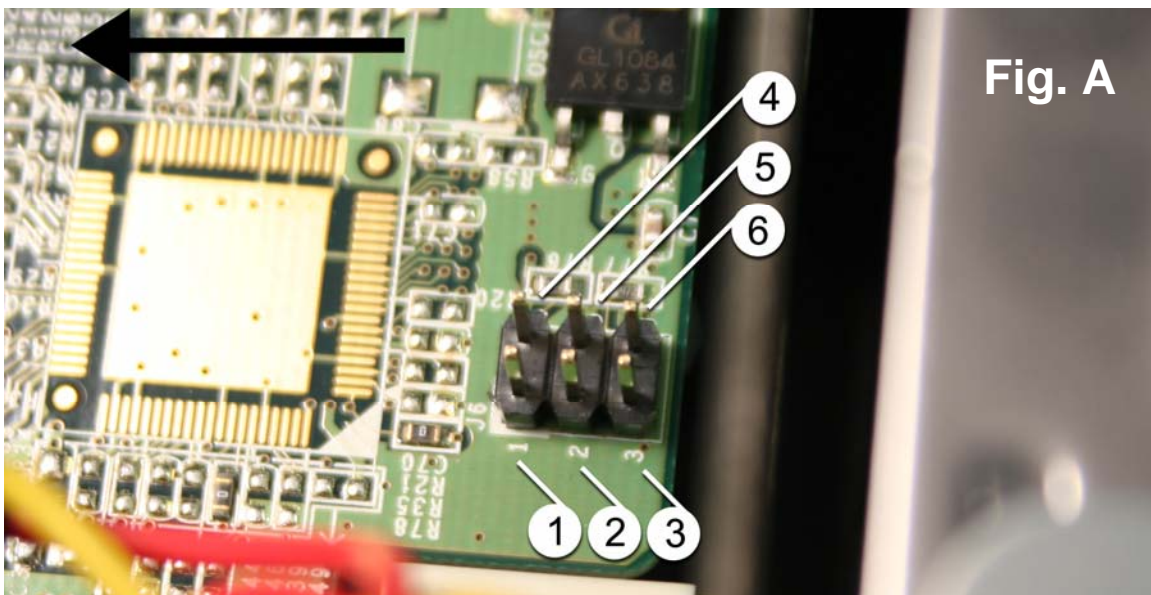
9. Your jumper block should look something like this when finished changing settings. Shown is RAID 0 (striping) with pins 1, 2, 5, and 6 covered. Note that the jumper shunts are oriented along the longest axis of the drive.
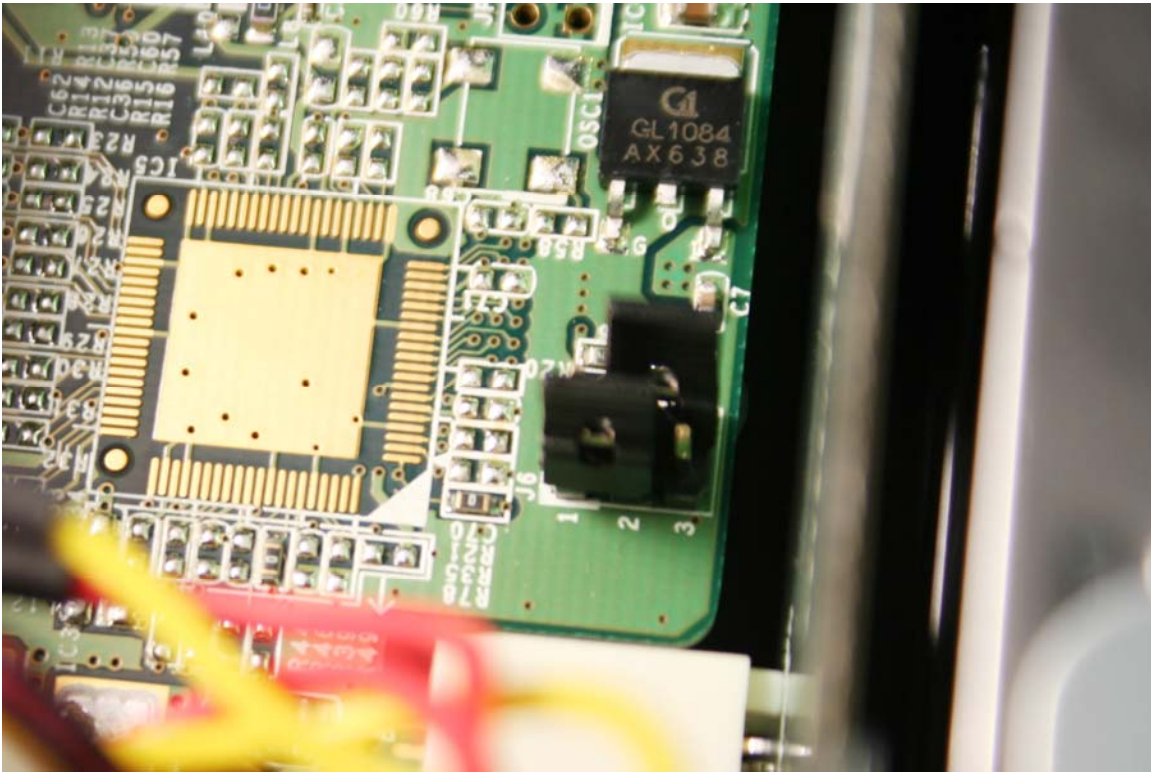
10. Replace the cover of your CADA-U32. With your disk array connected to your computer and turned on, initialize and format your new volume. If you need help initializing and formatting your drive, see the Formatting Guide, located on our Downloads page: www.cavalrystorage.com/su_download.htm

11. After initializing and formatting, your drive will be ready to use!

If you have any questions, visit our website at www.cavalrystorage.com for FAQs, manuals and more, or contact us at customersupprot@cavalrystorage.com.